

# Observation of Z candidates in High Pt Muon Data Sample

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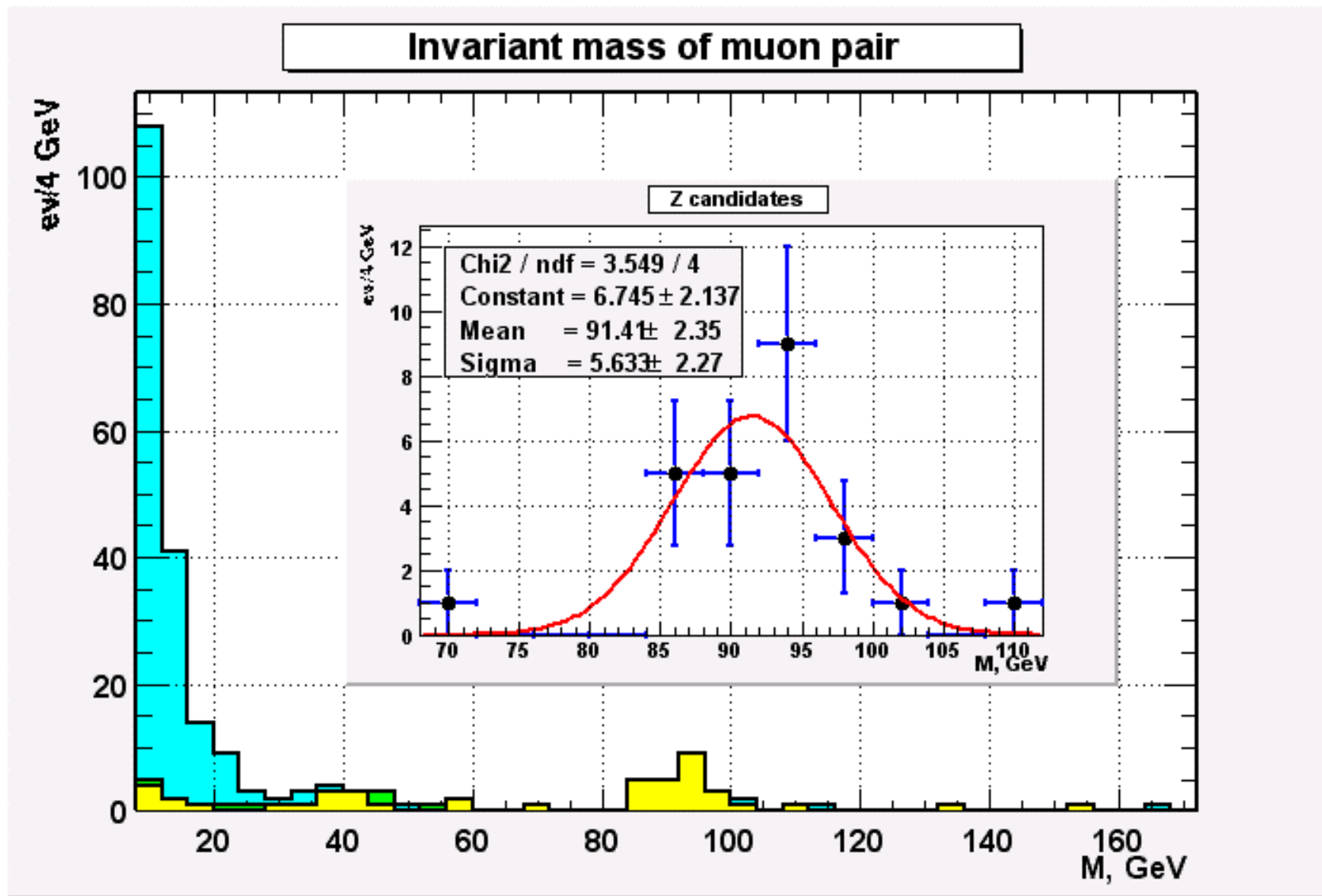
# Muon High Pt Data Sample

- Stream J Data taken before shutdown
- Data were processed by v 4.0.0 production code
- Skimmed by Christoph Paus using HighPtMuonStrip module
- The data files are stored on fcdfsgi2 in the area:
  - /cdf/data38b/s0/top/prod/strip/dst/
- The file names are \*.Dst-MUON

# Muon – Muon Selections

- Global Cuts
  - One and only one primary vertex in the event
  - Primary vertex Z position:  $|Z| < 60$  cm
- “Good Muon” cuts
  - Transverse momentum:  $p_t > 12$  GeV/c
  - Track impact parameter:  $|d| < 0.2$  mm with beam correction
  - Track delta z:  $|z - Z| < 5$  cm
  - Number of COT axial hits  $> 25$
  - Presence of CMU and stub matching:  $|dX| < 5$  cm
  - Muon tower energy:  $e_m < 2$  GeV ,  $hadron < 6$  GeV  
 $e_m + hadron > 0.1$  GeV
  - Isolation:  $coneR7Et = (Et \text{ in cone } 0.7 - Et \text{ of Muon}) < 4$  GeV
- Final cuts for every muon pair in the event
  - Event should pass Global cuts
  - One muon is good and the other passes isolation,  $p_t$ , and charge sign cuts

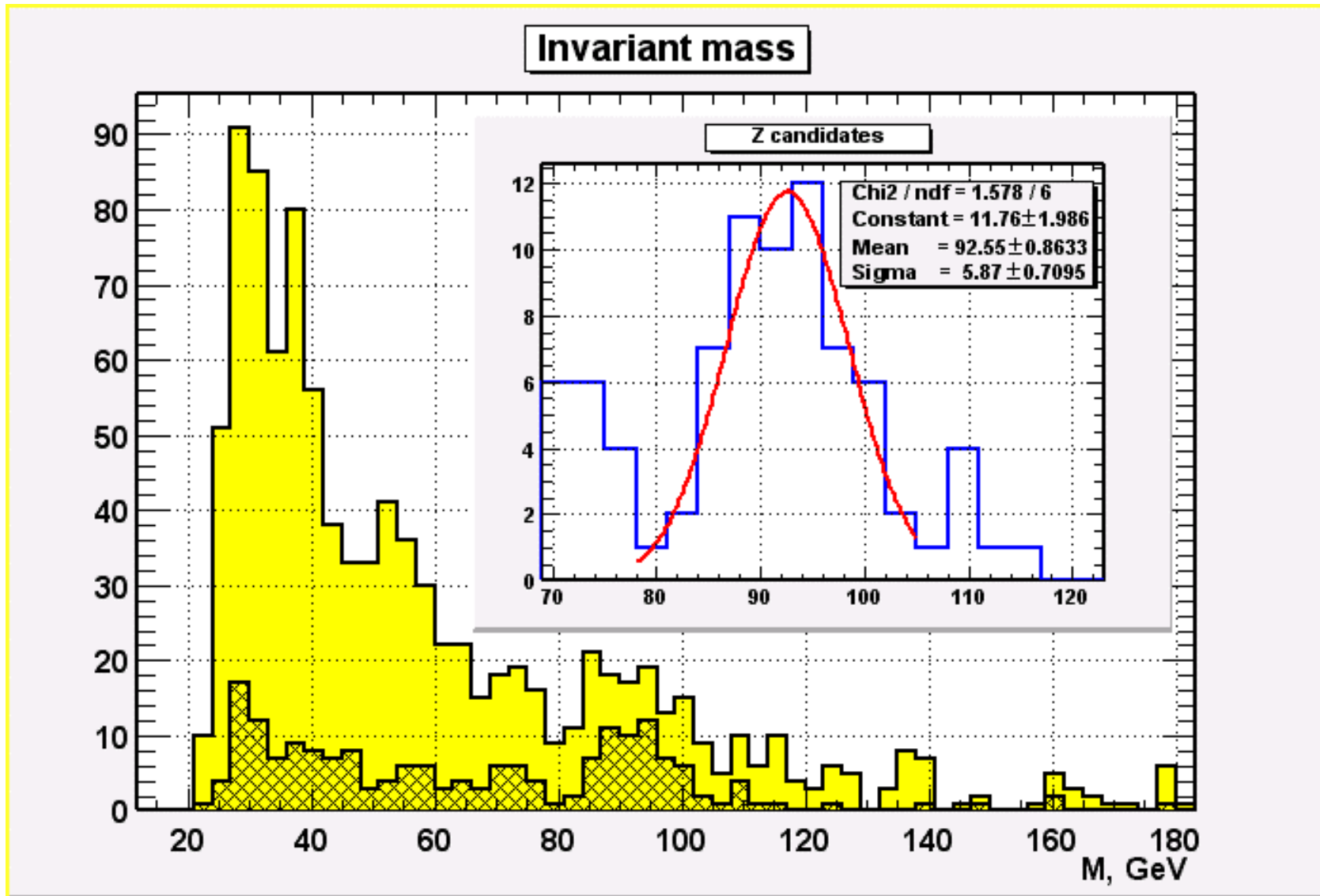
# 25 muon –muon Z candidates



# Muon – Track Selections

- Global Cuts
  - Minimum number of tracks:  $nTracks > 3$
- “Good Muon” cuts
  - Transverse momentum:  $p_t > 12 \text{ GeV}/c$
  - Track impact parameter:  $|d| < 0.25 \text{ mm}$  with beam correction
  - Number of COT axial hits  $> 20$  and COT stereo hits  $> 20$
  - Presence of CMU stub with track matching:  $|dX| < 5 \text{ cm}$
  - Muon tower energy:  $e_m < 2 \text{ GeV}$  ,  $hadron < 6 \text{ GeV}$   
 $e_m + hadron > 0.1 \text{ GeV}$
  - Isolation:  $coneR7Et = (Et \text{ in cone } 0.7 - Et \text{ of Muon}) < 4 \text{ GeV}$
- “Good Track” cuts are the same as “Good Muon” cuts but no muon stub presence is required
- Final cuts for every muon pair in the event
  - Event should pass Global cuts
  - Good track and muon with opposite charge sign and  $|zTrack - zMuon| < 1.7 \text{ cm}$

# 60 muon – track Z candidates



Z candidate :

Run = 123566 Event = 469584

